

Application S/N 10/688,377
Amendment Dated: March 27, 2006
Response to Office Action dated: November 14, 2005

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method comprising:

- providing at least one threshold value;
- determining a quality of service values for a wireless communication links with a plurality of at least one access points that comprises a part of a wireless local area network;
- determining a likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at a predetermined future time; and
- using the likelihood to determine whether to switch communications from the wireless local area network to a different network.

2. (canceled)

3. (currently amended) The method of claim 2 1 wherein determining a quality of service values for a wireless communication links with a plurality of at least one access points that comprises a part of a wireless local area network comprises determining a the plurality of quality of service values for a the wireless communication links with at least one the access points over a sampling period of time.

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4. (currently amended) The method of claim 3 wherein determining a likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at a predetermined future time comprises using the plurality of quality of service values to estimate a projected quality of service at the predetermined future time.

5. (currently amended) The method of claim 4 wherein determining a likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at a predetermined future time further comprises using the plurality of quality of service values to extrapolate a projected quality of service at the predetermined future time.

6. (original) The method of claim 5 wherein using the plurality of quality of service values to estimate a projected quality of service at the predetermined future time further comprises using a least square line fit process with the plurality of quality of service values to extrapolate the projected quality of service at the predetermined future time.

7. (original) The method of claim 6 wherein using the plurality of quality of service values to estimate a projected quality of service at the predetermined future time further comprises determining a standard error value as corresponds to the projected quality of service.

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8. (currently amended) The method of claim 7 wherein determining a likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at a predetermined future time further comprises using the standard error value to determine a probability that the projected quality of service will have at least the predetermined relationship with respect to the at least one threshold value at the predetermined future time.

9. (currently amended) The method of claim 1 and further comprising providing a first signal when there is at least a predetermined likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least the predetermined relationship with respect to the at least one threshold value at the predetermined future time.

10. (currently amended) The method of claim 9 and further comprising:

- when there is not at least a predetermined likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least the predetermined relationship with respect to the at least one threshold value at the predetermined future time, determining a likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at at least a second predetermined future time, which second predetermined future time is different than the predetermined future time.

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11. (original) The method of claim 10 wherein the second predetermined future time is sooner than the predetermined future time.

12. (original) The method of claim 10 wherein the predetermined future time is approximately 12 seconds in the future and the second predetermined future time is approximately 4 seconds in the future.

13. (currently amended) The method of claim 1 and further comprising:

- providing a list that identifies at least one access point;
- using the list when determining the likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at the predetermined future time.

14. (currently amended) The method of claim 13 wherein using the list when determining the likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at the predetermined future time comprises using the list to identify access points to be considered when determining the likelihood.

15. (currently amended) The method of claim 1 and further comprising receiving at least one parameter from an access point, and wherein determining a likelihood that the

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quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at a predetermined future time comprises using at least one parameter when determining the likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at the predetermined future time.

16. (currently amended) The method of claim 1 wherein determining a quality of service values comprises determining a received signal strength values as corresponds to the wireless communication links.

17. (currently amended) The method of claim 16 wherein determining a quality of service values further comprises determining a link margin value as corresponds to the wireless communication links as a function, at least in part, of the received signal strength values.

18. (currently amended) The method of claim 1 wherein determining a likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at a predetermined future time comprises determining a probability that the quality of service values for the wireless communication links with the plurality of

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access points will have at least a predetermined relationship with respect to the at least one threshold value at a predetermined future time.

19. (currently amended) The method of claim 1 wherein:

- determining a quality of service values for a wireless communication links comprises determining a quality of service for each of a plurality of wireless communication links that comprise a part of the wireless local area network; and

- determining a likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at a predetermined future time comprises:

- estimating a likely future quality of service value for each of the plurality of wireless communication links at a future time;
- selecting whichever of the likely future quality of service values represents a best quality of service relative to the other likely future quality of service values to provide a selected future quality of service value;
- using the selected future quality of service value to determine the likelihood that the quality of service will have at least a predetermined relationship with respect to the at least one threshold value at the predetermined future time.

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20. (currently amended) The method of claim 19 wherein:

- estimating a likely future quality of service value for each of the plurality of wireless communication links at a future time further comprises statistically estimating a reduced likely future quality of service value for at least some of the plurality of wireless communication links at a future time as a function, at least in part, of statistics regarding the wireless communication links; and
- selecting whichever of the likely future quality of service values represents a best quality of service relative to the other likely future quality of service values to provide a selected future quality of service value further comprises selecting whichever of the reduced likely future quality of service values represents a best quality of service relative to the other reduced likely future quality of service values to provide a selected reduced likely future quality of service value; and
- using the selected future quality of service value to determine the likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at the predetermined future time further comprises using the selected reduced future quality of service value to determine the likelihood that the quality of service will have at least a predetermined relationship with respect to the at least one threshold value at the predetermined future time.

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21. (original) A method to facilitate handing off a wireless communication from a wireless local area network to a wireless wide area network, comprising:

- monitoring wireless communication paths for at least some access points of the wireless local area network;
- determining a plurality of measured quality of service metrics over a sampling period for each of at least some of the monitored wireless communication paths,
- for at least some of the monitored wireless communication paths, using the plurality of measured quality of service metrics to extrapolate likely future quality of service values;
- using the likely future quality of service values to determine a probability that at least one of the monitored wireless communication paths will continue to provide viable wireless communication service;
- using the probability to determine whether a wireless subscriber unit presently supporting a wireless local area network communication is likely to soon require a hand off of that communication to the wireless wide area network.

22. (original) The method of claim 21 wherein monitoring wireless communication paths for at least some access points of the wireless local area network comprises monitoring all wireless communication paths that are received.

23. (original) The method of claim 21 wherein monitoring wireless communication paths for at least some access points of the wireless local area network comprises monitoring only selected wireless communication paths such that receivable wireless communication paths that are not selected are not monitored.

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24. (original) The method of claim 23 wherein monitoring only selected wireless communication paths such that receivable wireless communication paths that are not selected are not monitored comprises:

- receiving information regarding access points;
- using the information regarding access points to identify selected wireless communication paths to monitor.

25. (original)The method of claim 21 wherein using the plurality of measured quality of service metrics to extrapolate likely future quality of service values comprises using a least square line fit calculation.

26. (original) The method of claim 21 wherein using the plurality of measured quality of service metrics to extrapolate likely future quality of service values comprises using the plurality of measured quality of service metrics to extrapolate, for at least one of the wireless communication paths:

- a first likely future quality of service value for a first future point in time;
- a second likely future quality of service value for a second future point in time that is closer in time than the first future point in time.

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27. (original) The method of claim 26 wherein using the likely future quality of service values to determine a probability that at least one of the monitored wireless communication paths will continue to provide viable wireless communication service further comprises using the first and second likely future quality of service values to determine corresponding probabilities that at least one of the monitored wireless communication paths will continue to provide viable wireless communication service at the first future point in time and at the second future point in time.

28. (currently amended) A communication device capable of communicating in a wireless local area network and a wide area network, comprising:
a receiver that receives wireless signals from the wireless local area network; and
a programmable control unit, wherein the programmable control unit is programmed to:
provide at least one threshold value;
determine a quality of service values for a wireless communication links with a plurality of at least one access points that comprises a part of the wireless local area network; and
determine a likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at a predetermined future time; and
use the likelihood to determine whether to switch communications from the wireless local area network to a different network.

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29. (currently amended) The communication device according to claim 28, wherein the programmable control unit is programmed to determine the quality of service values for the wireless communication link by determining a plurality of the quality of service values for the wireless communication links with at least one the access points over a sampling period of time.

30. (currently amended) The communication device according to claim 29, wherein the programmable control unit is programmed to determine a likelihood that the quality of service values for the wireless communication links with the plurality of access points will have at least a predetermined relationship with respect to the at least one threshold value at a predetermined future time by using the plurality of quality of service values to estimate a projected quality of service at the predetermined future time.